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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,703	04/16/2004	Stephen J. Moloney	ILEX:064US	8948

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EXAMINER	
ANDERSON, JAMES D	

ART UNIT	PAPER NUMBER
1614	

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/825,703	MOLONEY ET AL.	
	Examiner	Art Unit	
	James D. Anderson	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☒ Claim(s) *45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 sheets*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Informalities

Claims 1-45 are currently pending and are the subject of this Office Action.

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicants claim priority benefits under 35 U.S.C. 119(e) to U.S. Provisional Application No. 60/330,230, filed October 18, 2001 and claim the benefit under 35 U.S.C. 120 to PCT/US02/32959, filed October 16, 2002.

The earliest effective U.S. filing date for the instant application has been determined to be October 18, 2001.

It is noted that this application appears to claim subject matter disclosed in prior Application No. PCT/US02/32959, filed October 16, 2002. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the

later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or

an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Claim Objections

Claim 45 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 3-14, independent claim 1 recites the limitation: "A method for increasing the expression of dermal collagen in skin comprising the administration of... "

in lines 1-2. Claim 1 and claims dependent from claim 1 are indefinite because it is not clear where or how the compound is being administered.

In claims 1 and 3-14, independent claim 1 recites the limitation: "A method for increasing the expression of dermal collagen in skin comprising the administration of an effective amount... " in line 1. Claim 1 and all claims dependent from claim 1 are indefinite because it is not clear what the amount of compound being administered is effective for.

In claims 15 and 17-26, independent claim 15 recites the limitation: "A method for increasing skin thickness comprising the administration of..." in line 1. Claim 15 and claims dependent from claim 15 are indefinite because it is not clear where or how the compound is being administered.

In claims 15 and 17-26, independent claim 15 recites the limitation: "A method for increasing skin thickness comprising the administration of an effective amount..." in line 1. Claim 15 and claims dependent from claim 15 are indefinite because it is not clear what the amount of compound being administered is effective for.

In claims 27 and 29-36, independent claim 27 recites the limitation: "...comprising the administration of..." in line 2. Claim 27 and claims dependent from claim 27 are indefinite because it is not clear where or how the compound is being administered.

In claims 27 and 29-36, independent claim 15 recites the limitation: "...comprising the administration of an effective amount..." in lines 2-3. Claim 27 and

claims dependent from claim 27 are indefinite because it is not clear what the amount of compound being administered is effective for.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10, 15-23 and 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,127,350 (Issued October 3, 2000).

The '350 patent teaches the compounds of the instantly claimed methods (see columns 1-2). It is further disclosed that a "therapeutically effective amount" of the compounds described therein can be transdermally administered (column 4, line 53) to a patient in need of therapy (see Claims).

Examiner notes that the instant claims are drawn to methods of: 1) increasing dermal collagen in skin; 2) increasing skin thickness; and 3) reversing the formation of fine lines and wrinkles in skin. The '350 patent is silent with respect to the instantly claimed effects of compounds of Formula (I) on skin. However, "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function

or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

It is the Examiner's position that the '350 patent renders obvious the rejected claims because administration of the compounds taught in the patent to treat a skin condition (*e.g.* melanoma as in Claim 15 of the '350 patent) would have the effects as instantly claimed. The instant claims do not define a separate, patentably distinct patient population from the '350 patent.

Claims 11-12, 14, 24, 26, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,127,350 (Issued October 3, 2000) as applied to claims 1-10, 15-23 and 27-35 above, and further in view of Griffiths (Drugs & Aging, 1999, 14(4):289-301).

The '350 patent discloses as above. Griffiths discloses that retinoids, antioxidants, and α-hydroxy acids are often used in the treatment of photoaged skin (Abstract). The reference further discloses that histologically, photoaged skin has characteristics of epidermal thinning, loss of collagens I, III, and VII, and an increase in metal metalloproteinases (p. 290, left column, ¶ 2). Clinically, photoaged skin has both coarse and fine wrinkles (p. 290, left column, ¶ 2). Further, Griffiths describes how after menopause, women's skin ages relatively rapidly as demonstrated by atrophy, fine wrinkling, dryness, laxity, and a reduction in collagen content (p. 298, left column, Section 5).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to treat photoaged and postmenopausal skin with a compound that: 1) increases collagen; 2) increases skin thickness; and 3) reverses the formation of fine lines and wrinkles. Further, it would have been obvious to administer a retinoid, α-hydroxy acid, or antioxidant in combination with said compound given the disclosure of Griffiths wherein these agents are disclosed as being useful for the treatment of photoaged skin.

Claims 13 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,127,350 (Issued October 3, 2000) as applied to claims 1-10, 15-23 and 27-35 above, and further in view of Leong *et al.* (Pathology, 1978, 10(4):365-371).

The '350 patent discloses as above. Leong *et al.* disclose that the loss of dermal collagen is suggested to be the main factor responsible for the decrease in skin fold thickness observed in association with osteoporosis (Abstract).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to treat the skin of a subject with osteoporosis with a compound that increases collagen and skin thickness given the disclosure of Leong *et al.* wherein decreased collagen and skin thickness are disclosed as being associated with osteoporosis.

Claims 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,043,330 (Issued August 27, 1991) and U.S. Patent No. 6,127,350 (Issued October 3, 2000) in view of U.S. Patent No. 5,133,972 (Issued July 28, 1992).

The '330 patent discloses the compounds of Formula (I) (Column 2, Lines 1-39). A pharmaceutical composition comprising a therapeutically effective amount of the compounds of Formula (I) is also disclosed (see Claim 16).

The '350 patent discloses the compounds of the instantly claimed compositions (see columns 1-2). It is further disclosed that the compounds described therein can be administered transdermally (column 4, line 53).

The '972 patent discloses diphosphonic acid derivatives formulated in topical compositions (see especially Abstract).

Thus, the instantly claimed topical compositions comprising a compound of Formula (I) would have been *prima facie* obvious at the time the invention was made. The skilled artisan would have been motivated to formulate a topical composition of the instantly claimed compounds of Formula (I) given the combined disclosures of the '330 and '972 patents. The motivation to combine the references is found in: 1) the '330 patent wherein it is disclosed that for the treatment of specific disease states, compositions comprising a pharmaceutically acceptable gem-diphosphonate can be administered as a "solution, suspension, emulsion or by intradermal, intramuscular, intravenous or intraperitoneal injection" (Column 30, Lines 29-34); 2) the '350 patent which discloses the diphosphonate compounds described therein can be administered

transdermally; and 3) the '972 patent which discloses topical compositions comprising diphosphonic acid derivatives.

It would be well within the level of ordinary skill in the art to substitute the diphosphonic acid derivatives of the '972 patent with the instantly claimed di-phosphonate compounds in order to formulate a topical composition for the treatment of photoaged skin.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Anderson whose telephone number is 571-272-9038. The examiner can normally be reached on MON-FRI 9:00 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on 571-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James D. Anderson
Examiner
Art Unit 1614

June 19, 2006

Ardin H. Marschel 6/21/06
ARDIN H. MARSCHEL
SUPERVISORY PATENT EXAMINER